

#2

Sheet 1 of 8

FORM PTO-1449 U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE INFORMATION DISCLOSURE CITATION (Use several sheets if necessary)	ATTY. DOCKET NO. 1758-4043US1	SERIAL NO. 09/376,911
	APPLICANT Michon et al	
	FILING DATE August 18, 1999	GROUP ART UNIT 1642 1645

U.S. PATENT DOCUMENTS

EXAMINER INITIAL	DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE
SD	4,673,574	6/16/87	Anderson	424	92	7/5/83
SD	5,192,540	3/9/93	Kuo et al	424	92	2/21/89
SD	4,902,506	2/20/90	Anderson et al	424	92	5/5/86
SD	5,306,492	4/26/94	Porro	424	88	7/30/92

FOREIGN PATENT DOCUMENTS

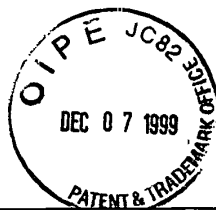
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SD	WO 97/41897	11/13/97	PCT	A61K	47/48		
SD	EP 0 747 063 A2	11/12/96	EP	A61K	47/48		

OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Papers, Etc.)

SD	Finke et al, "Biosynthesis of the <i>Escherichia coli</i> K5 Polysaccharide, a Representative of GroupII Capsular Polysaccharides: Polymerization In Vitro and Characterization of the Product, <i>Journal of Bacteriology</i> , July 1991, p. 4088-4094.
SD	Kjellén et al, "Two Enzymes In One: N-Deacetylation and N-Sulfation In Heparin Biosynthesis Are Catalyzed By The Same Protein, <i>Adv Exp Med Biol</i> 1992; 313:107-111.
EXAMINER	DATE CONSIDERED
SD	Jan. 02

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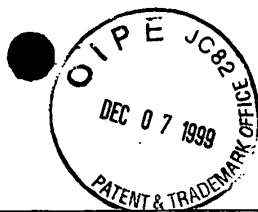
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SD	4,761,283	8/2/88	Anderson	424	92	3/28/86
SD	5,554,730	9/10/96	Woiszwilllo et al	530	410	12/23/94
SD	4,356,170	10/26/82	Jennings et al	424	92	5/27/81
SD	5,445,817	8/29/95	Schneerson et al	424	194	8/21/92

FOREIGN PATENT DOCUMENTS

	DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUBCLASS	TRANSLATION	
						YES	NO

OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Papers, Etc.)

SD		Kusche et al, "Biosynthesis of heparin. Purificaiton of a 110-kKa mouse mastocytoma protein required for both glucosaminyl N-deacetylation and N-sulfation, <u>J. Biol Chem</u> 1991 May 5; 266(13):8044-8049.
SD		Eriksson et al, "Expression of the mouse mastocytoma glucosaminyl N-deacetylase/N-sulfotransferase in human kidney 293 cells results in increased N-sulfation of heparan sulfate, <u>Biochemistry</u> 1996 Apr 23; 35(16):5250-5256.
EXAMINER SD		DATE CONSIDERED Jan. 02
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	FILING DATE August 18, 1999	GROUP ART UNIT 1642-1645

U.S. PATENT DOCUMENTS

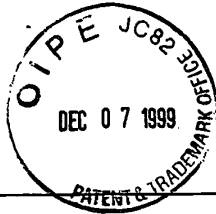
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SD	5,780,606	7/14/98	Kandil et al	536	18.7	6/7/95
SD	4,057,685	11/8/77	McIntire	536	18	5/9/74
SD	4,808,700	2/28/89	Anderson et al	530	403	8/10/84
SD	4,459,286	7/10/84	Hillman et al	424	87	1/31/83

FOREIGN PATENT DOCUMENTS

	DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUBCLASS	TRANSLATION	
						YES	NO

OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Papers, Etc.)

SD		Kusche-Gullberg et al, "Identification and Expression in Mouse of Two Heparan Sulfate Glucosaminyl N-Deacetylase/N-Sulfotransferase Genes, <u>The Journal of Biological Chemistry</u> , May 1, 1998, Vol. 273, No. 19, pp. 11902-11907.
SD		Lelong et al, "N-acetyl-heparosan lyase of Escherichia coli K5: gene cloning and expression, <u>J. Bacteriol</u> 1996 Dec; 178(24)7260-7264.
EXAMINER SD		
DATE CONSIDERED Jan. 92		
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U.S. PATENT DOCUMENTS

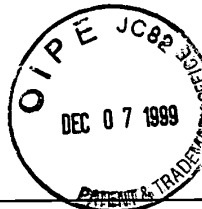
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SD	4,965,338	10/23/90	Tabankia et al	528	272	8/9/89
SD	4,663,160	5/5/87	Tsay et al	424	87	3/14/83
SD	4,619,828	102886	Gordon et al	424	92	1/5/84
SD	4,711,779	12/8/87	Porro et al	424	92	7/2/86

FOREIGN PATENT DOCUMENTS

	DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUBCLASS	TRANSLATION	
						YES	NO

OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Papers, Etc.)

SD	Hannesson et al, "Biosynthesis of heparin. Use of Escherichia coli K5 capsular polysaccharide as a model substrate in enzymic polymer-modification reactions, <u>Biochem J</u> 1991 Apr 1;275(Pt1):151-158.
SD	Silbert, "Biosynthesis of heparin. IV. N-Deacetylation of a precursor glycosaminoglycan, <u>J Biol Chem</u> 1967 Nov 10; 242(21):5153-5157.
EXAMINER SD	DATE CONSIDERED Jan. 02
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U.S. PATENT DOCUMENTS

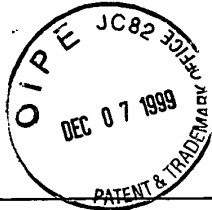
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FOREIGN PATENT DOCUMENTS

		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUBCLASS	TRANSLATION	
							YES	NO

OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Papers, Etc.)

57		Hirschberg et al, "Molecular cloning and expression of a glycosaminoglycan N-acetylglucosaminyl N-deacetylase/N-sulfotransferase from a heparin-producing cell line, <u>J Biol Chem</u> 1994 Jan 21; 269(3):2270-2276.
57		Lidholt et al, "Substrate specificities of glycosyltransferases involved in formation of heparin precursor and <i>E. coli</i> K5 capsular polysaccharides, <u>Carbohydrate Research</u> , 255(1994) 87-101.
EXAMINER 57		DATE CONSIDERED Jan. 02
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U.S. PATENT DOCUMENTS

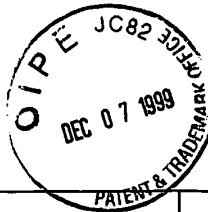
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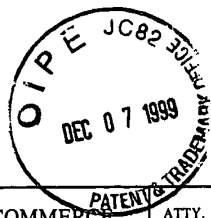
OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Papers, Etc.)

57		Casu et al, "Heparin-like compounds prepared by chemical modification of capsular polysaccharide from <i>E. coli</i> K5, <u>Carbohydrate Research</u> 263 (1994) 271-284.
57		Dick et al, "Glycoconjugates of Bacterial Carbohydrate Antigens", <u>Contributions to Microbiology and Immunology</u> , Library of Congress August 31, 1989, pp. 49-114.
EXAMINER 57		DATE CONSIDERED Jan. 02
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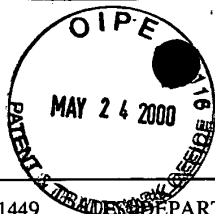
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		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUBCLASS	TRANSLATION
							YES NO
OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Papers, Etc.)							
SD				Romanowska, A. et al, "Michael Additions for Syntheses of Neoglycoproteins", <u>Methods in Enzymology</u> , Vol. 242, pp. 90-101.			
SD				Roy et al, "Efficient Synthesis of α (2-8)-Linked N-Acetyl and N-Glycolylneuraminic Acid Disaccharides from Colominic Acid, <u>Glycoconjugate J</u> (1990) 7:3-12.			
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		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUBCLASS	TRANSLATION	
							YES	NO
OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Papers, Etc.)								
57		Geyer et al., "Immunochemical Properties of Oligosaccharide-Protein Conjugate with <i>Klebsiella</i> -K2 Specificity", <u>Med. Microbiol. Immunol.</u> , 165: 171-288 (1979)						
EXAMINER				DATE CONSIDERED				
57				Jan. 02.				
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U.S. PATENT DOCUMENTS

EXAMINER INITIAL	DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE
SD	5,576,002	11/19/96	Jennings et al	424	197	5/5/94
SD	4,727,136	2/23/88	Jennings et al	530	395	10/1/85

FOREIGN PATENT DOCUMENTS

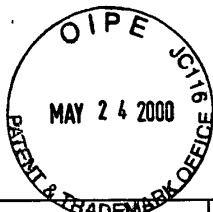
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SD	WO 96/40239	12/19/96	PCT	A61K	39/095		

OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Papers, Etc.)

SD	Jennings et al, "Induction of Meningococcal Group B Polysaccharide-Specific IgG Antibodies in Mice By Using an N-Propionylated B Polysaccharide-Tetanus Toxoid Conjugate Vaccine", <u>The Journal of Immunology</u> , Vol. 127, 1708-1713, No. 5, September 1, 1996.
SD	Jennings et al "Unique Intermolecular Bactericidal Epitope Involving The Homosialopolysaccharide Capsule on the Cell Surface of Group B <i>Beisseria meningitidis</i> and <i>Escherichia coli</i> K1, <u>The Journal of Immunology</u> , Vol. 142, 3584-3591, No. 111, May 15, 1989.
EXAMINER SD	DATE CONSIDERED December 01

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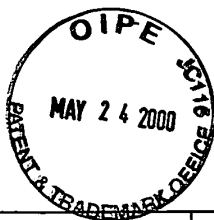
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						YES	NO

OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Papers, Etc.)

SD	°	Zhang et al, "Helium Ion Implanted Optical Waveguide in KTiOPO", <u>Electronic Letters</u> , Vol. 28, No. 7, March 26, 1992.
SD	°	Fusco et al, "Meningococcal vaccine development: a novel approach", <u>Exp. Opin. Invest. Drugs</u> , (1998) 7(2).
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U.S. PATENT DOCUMENTS

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FOREIGN PATENT DOCUMENTS

		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUBCLASS	TRANSLATION	
							YES	NO

OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Papers, Etc.)

50		Granoff et al, "Bactericidal Monoclonal Antibodies That Define Unique Meningococcal B Polysaccharide Epitopes That Do Not Cross-React with Human Polysialic Acid", <u>The Journal of Immunology</u> , May 15, 1998, Vol. 160(10) 5028-36.
50		Jennings et al, "Chemically Modified Group B Meningococcal Polysaccharides as Human Vaccines", Proceedings of the National Meeting: Symposium on the Applications and Modifications of Industrial Polysaccharides, NL, Amsterdam, Elsevier, Vol. 193, 1987, pp. 149-156.

EXAMINER 50	DATE CONSIDERED December 01
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				FILING DATE August 18, 1999		GROUP ART UNIT 4642 1645		
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		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUBCLASS	TRANSLATION	
							YES	NO
OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Papers, Etc.)								
SD				Fusco P C et al: "Preclinical evaluation of a novel group B meningococcal conjugate vaccine that elicits bactericidal activity in both mice and nonhuman primates." JOURNAL OF INFECTIOUS DISEASES, (1997 FEB) 175 (2) 364-72., XP000291371, abstract page 364, column 2, paragraph 3 - page 366, column 2, paragraph 2.				
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